

REMARKS

Reconsideration of the present application is requested.

In paragraph 4 of the Office Action Summary, it is indicated that claim 14 is pending in the application. Actually, claims 1-14 are pending and have been rejected; see paragraph 6 in the Office Action Summary.

Rejection Under 35 USC 112, second paragraph

With one exception, the claim rejections under 35 USC 112, second paragraph, have been withdrawn.

However, the Examiner has continued the rejection of the terminology "reactive derivatives," based upon the same statutory section. In response thereto, claims 11, 12 and 14 have been amended to recite that the reactive derivatives comprise "anhydrides, halogens or esters formed with ethylenically unsaturated alcohols." This definition finds support at page 11, lines 24 and 29 and page 12, lines 1-3 of the specification, and in Examples 1-8, wherein anhydrides are used.

The amendment to claims 11, 12 and 14 should be accepted since this amendment reduces the number of issues involved in this case and does not raise any issue of new matter. Thus, the rejection under 35 USC 112 should be withdrawn.

Rejection under 35 USC 103(a)

Claims 1-14 have been rejected under 35 USC 103(a) as being unpatentable over Nobuo et al. (JP 2002-003478, January 9, 2002, Machine Translation) and Swatloski et al. (WO 03/029329, April 10, 2003, PTO-1449 submitted February 2, 2006). This rejection is respectfully traversed. Reconsideration thereof is requested.

The Examiner mainly repeats the previous arguments that the claims are obvious in view of Nobuo et al. (JP 2002-003478) ('478) and Swatloski et al. (WO 03/029329) ('329).

Detailed comments concerning the Nobuo et al. '478 reference have been set forth on pages 10-14 of the Amendment filed on April 15, 2008. Those comments are incorporated herein by reference.

An error did occur with respect to the Swatloski et al. reference, as noted by the Examiner on page 6 of the Office Action. Inadvertently, the comments set forth on pages 15-17 of the Amendment filed on April 15, 2008 were directed to GB-A-1 425624 which was cited in Europe. Comments concerning the '329 Swatloski reference, cited in the present application, are set forth below.

The '329 document (WO 03/029329) is acknowledged on page 6, last paragraph of the specification. The '329 document relates to dissolving cellulose in various ionic liquids, especially under microwave irradiation, and precipitating pure cellulose from the solution form by selected solvents. As explained previously, and in the specification on page 1 to page 2, line 3, normal starch comprises amylose and amylopectin. The main component is amylopectin which is a very large molecule with a branched structure and having a molecular weight from one to several millions, whereas cellulose is a linear polymer having a considerable smaller molecular weight, typically a few hundred thousands. Also, the glucoside bonds of cellulose are different from those of amylopectin/amylose. It is generally acknowledged that as the molecular weight of polymers increases, the more difficult it is to dissolve the same in a solvent. Thus, based on the teaching of Swatloski et al. '329, it is not obvious that starch could be dissolved and esterified in an ionic solvent.

The Examiner states at page 5, line 3 of the Office Action that Swatloski et al. do not teach esterification or derivatization of starch. However, Swatloski et al. '329 appear to teach esterification (acylation) of cellulose on page 8 of the reference.

The Examiner's main argument seems to be that since agarose (Nobuo et al. '478), cellulose (Swatloski et al. '329) and starch (present invention) are all polysaccharides, the teachings of the cited references are applicable to starch, or the skilled artisan would at least have had a reasonable expectation of success (pages 5-6 of the Office Action). It is respectfully submitted that this is a hindsight reconstruction, and that the Examiner has totally disregarded the fact that starch is structurally different from agarose and cellulose, and that starch is also contrary to these substances believed to be practically insoluble in solvents (other than water which cannot be used as a solvent in esterifications).

As set forth on page 7, lines 20-24 of the specification, the present invention is based on the surprising discovery that native starch as well as hydrolyzed starch can be dissolved in an ionic liquid, the dissolved starch can be acetylated with acetic anhydride without any catalysts, and the acetylated starch ester can be precipitated from the reaction medium by the addition of various alcohols.

A detailed discussion of obviousness is set forth on pages 8-10 of the Amendment filed on April 15, 2008. Based on those principles, it is again submitted that the Examiner has failed to present a *prima facie* case of obviousness in relation to the cited prior art. Therefore, the rejection under 35 USC 103 should be withdrawn.

Conclusion

In view of the above amendments and remarks, reconsideration of the rejections and favorable action on all of the claims are earnestly solicited.

Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact Raymond C. Stewart Reg. No. 21,066 at the telephone number of the undersigned below, to conduct an interview in an effort to expedite prosecution in connection with the present application.

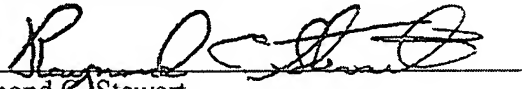
Application No. 10/566,975
Amendment dated October 16, 2008
After Final Office Action of June 17, 2008

Docket No.: 0696-0229PUS1

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37.C.F.R. §§1.16 or 1.17; particularly, extension of time fees.

Dated: October 16, 2008

Respectfully submitted,

By 
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